REMARKS

These amendments and remarks are being filed in response to the Office Action dated July 11, 2005. For the following reasons this application should be allowed, and the case passed to issue.

No new matter or considerations are introduced by this amendment. Amended claim 19 is supported by claim 24. Claims 23 and 37 are amended to correct dependency. The amendments to claims 31, 39, and 40 correct minor informalities. The amendment to claim 42 is supported by claim 43. Claims 29 and 40 provide support for the amendment to claim 47.

Claims 19, 20, 23, 26-37, 39-42, and 47 are pending in this application. Claims 19-21, 23, 25-42, and 44-47 have been rejected. Claims 24 and 43 are objected to. Claims 19, 23, 31, 37, 39, 40, 42, and 47 have been amended in this response. Claims 21, 24, 25, 38, and 43-46 have been canceled in this response, and claims 1-18 and 22 were previously canceled.

Allowable Subject Matter

Claims 24 and 43 are objected to but would be allowable if rewritten in independent form.

Applicants gratefully acknowledge the indication of allowable subject matter. In accordance with the Examiner's recommendations, claims 19 and 42 have been amended to include limitations from claims 24 and 43, respectively.

Claim Rejections Under 35 U.S.C. § 112

Claim 21 was rejected under 35 U.S.C. § 112, first paragraph, as allegedly being not enabled comply with the written description requirement. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

This rejection is moot because claim 21 has been cancelled.

Claim 23-25, 37, and 38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 23 depends from claim 22, which has been canceled. Claims 24, 25, 37, and 38 depend upon a rejected base claim. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The dependency of claims 23 and 37 has been amended. Claims 24, 25, and 38 have been cancelled.

Claim Rejections Under 35 U.S.C. § 102

Claims 19-21 and 23 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ochoa et al. (U.S. Pat. No. 6,046,268). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 19, is a is a rechargeable lithium ion battery comprising a positive electrode comprising a collecting electrode and an active material layer formed on the collecting electrode. The active material layer contains particles of a positive electrode active material within a prescribed particle size range. The active material layer has a thickness within a prescribed layer thickness range. The active material layer comprises a first active material layer having a first porosity within a first porosity range and a second active material layer having a second porosity within a second porosity range higher than the first porosity range. The first active material layer and the second active material layer contains particles of substantially the same particle size. The rechargeable lithium ion battery further comprises a negative electrode and a non-aqueous electrolytic solution.

The Examiner asserted that Ochoa et al. disclose the claimed rechargeable battery. The Examiner interpreted a porosity range equal to the pore size. The Examiner believes Applicants

intend to recite a porosity range as equal to the number or density of pores. The Examiner further believes that Applicants equate small particle diameters with a resultant higher porosity. Applicants traverse the Examiner's assumptions. The Examiner has no basis for the asserted assumptions. The cited portion of the specification does not support the Examiner's assumption. The Examiner has not pointed out any affirmative statements by Applicants that porosity means anything other than its common definition in the art.

Ochoa et al. do not disclose the claimed lithium ion battery, as Ochoa et al. do not disclose the positive electrode comprising the first active material layer and the second active material active layer containing particles of substantially the same size, as required by claim 19.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Ochoa et al. do not disclose the claimed lithium ion battery with a positive electrode comprising the first active material layer and the second material active layer containing particles of substantially the same size, as required by claim 19, Ochoa et al. do not anticipate claim 19.

Claim Rejections Under 35 U. S. C. § 103

Claims 25-32, 37-42, and 44-47 were rejected under 35 U. S. C. 103(a) as being unpatentable over Ochoa et al. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Claims 25 and 38 have been cancelled. Claims 26-32 and 37 depend from claim 19 and are allowable for at least the same reasons as claim 19, as Ochoa et al. do not suggest the claimed lithium ion battery with a positive electrode comprising the first active material layer and the second material active layer containing particles of substantially the same size, as required by claim 19. Claim 42 also requires a positive electrode comprising the first active material layer and the second material active layer containing particles of substantially the same size. Therefore, claim 42 is also not suggested by Ochoa et al.

An aspect of the invention, per claim 39, is a rechargeable lithium ion battery with a positive electrode comprising an active material layer containing a positive electrode active material wherein the thickness of the active material layer is at a range of 20 μm to 80 μm, the particle diameter of the positive electrode active material is 5 um or less, the porosity of the active material layer is 50% or more, and the porosity of the active material layer closer to the collecting electrode is lower than an active material layer remote from the collecting electrode.

Another aspect of the invention, per claim 40, is a rechargeable lithium ion battery with a positive electrode comprising an active material layer containing a positive electrode active material wherein each of the first and second active material layers each have a thickness within a range of 20 μm to 30 μm, a porosity of the first active material layer is 30% or more and less than 50%, a porosity of the second active material layer is within a range of 50% to 60%, and a particle diameter of the positive electrode active material is 5 μm or less.

Another aspect of the invention, per claim 47, is a rechargeable lithium ion battery with a positive electrode comprising an active material layer containing particles of a positive electrode active material having an average particle diameter of 5 μm or less, the active material having a layer thickness of 40 μm to 60 μm, the active material layer having a local porosity changed along a direction of the layer thickness, wherein the active material layer has an average porosity of 50% or more, the thicknesses of the first and second active material layers are each set within a range of 20 μm to 30 μm, the first active material layer has a porosity of 30% to 50%, and the second active material layer has a porosity of 50% to 60%.

The Examiner averred that the claimed porosity ranges, particle diameters, and thicknesses of the electrodes are optimizable parameters for result-effective variables.

Contrary to the Examiner's assertions, Ochoa et al. do not suggest the claimed rechargeable lithium ion batteries. Ochoa et al. do not suggest the claimed porosity ranges, particle diameters, and electrode thicknesses. The Examiner has no basis for asserting that the claimed porosity ranges, particle diameters and electrode thicknesses are obvious.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). There is no suggestion in Ochoa et al. to modify the battery of Ochoa et al. so that it has a positive electrode comprising active material layers having the claimed porosities, particle diameters, and electrode thicknesses.

The requisite motivation to support the ultimate legal conclusion of obviousness under 35 U.S.C. § 103 is not an abstract concept, but must stem from the applied prior art as a whole and realistically impel one having ordinary skill in the art to modify a specific reference in a specific manner to arrive at a specifically claimed invention. *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989). Accordingly, the Examiner is charged with the initial burden of identifying a source in the applied prior art for the requisite realistic motivation. *Smiths Industries Medical System v. Vital Signs, Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999); *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1449 (Fed. Cir. 1997). There is no motivation in Ochoa et al. to modify the battery so that it has a positive electrode comprising active material layers having the porosities, particle diameters, and electrode thicknesses, required by claims 39, 40, and 47.

In rejecting a claim under 35 U.S.C. § 103, the Examiner is required to discharge the initial burden by, *inter alia*, making **"clear and particular"** factual findings as to a **specific understanding** or **specific technological principle** which would have **realistically** impelled one having ordinary skill in the art to modify an applied reference to arrive at the claimed invention based upon facts, -- not generalizations. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.*, 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, *supra*; *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). That burden has not been discharged, as the Examiner has provided no factual basis for modifying the Ochoa et al. battery to include a positive electrode comprising active material layers having the porosities, particle diameters, and electrode thicknesses, required by claims 39, 40, and 47.

The only teaching of the rechargeable lithium ion battery with the positive electrode comprising active material layers having the claimed porosities, particle diameters, and electrode thicknesses is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The motivation for modifying the prior art must come from the prior art and must be based on facts.

Furthermore, the Examiner did not provide a factual basis to support the allegations that the active materials having a certain particle size would necessarily provide layers having the claimed porosities. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). "Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(citations omitted). Clearly, the Examiner's assertion that Ochoa et al. disclose the claimed porosity relationships is incorrect.

Although the Examiner concluded that the it would have been obvious to modify Ochoa et al. to produce a battery that inherently included a positive electrode comprising the claimed porosities, particle diameters, and electrode thicknesses, as required by claims 39, 40, and 47, the Examiner's conclusion lacks the requisite factual support. The Examiner's retrospective assessment of the claimed invention and use of unsupported conclusory statements are not legally sufficient to generate a case of *prima facie* obviousness. The motivation for modifying the prior art must come from the prior art and must be based on facts. The Examiner is not free

to ignore the judicial requirement for **facts**. To do so is legal error. *In re Lee,* 277 F.3d 1338 (Fed. Cir. 2002).

Claims 33-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ochoa et al. in view of Kawakami et al. (U.S. Pat. No. 6,432,585). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Claims 33-36 depend from claim 19, and are allowable for at least the same reasons as claim 19. Kawakami et al. do not cure the deficiencies of Ochoa et al., as Kawakami et al. do not suggest the claimed rechargeable lithium ion battery with a positive electrode comprising the first active material layer and the second material active layer containing particles of substantially the same size.

In view of the above amendments and remarks, Applicants submit that this case should be allowed, and passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Bernard P. Codd

Bernard P. Codd
Registration No. 46,429

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BPC:MWE
Facsimile: 202.756.8087
Date: December 12, 2005

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